

3730 & 3530 SERIES

Digital Video with Bi-directional/Return Data

User Manual

Infinova

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SERVICE NOTICE

The installation of this product should be made by qualified personnel. Do not attempt to service this product yourself. Refer all servicing to qualified personnel.

If you require information during installation of this product or if service seems necessary, contact the local suppliers or Infinova at 1-732-355-9100 in 51 Stouts Lane, Monmouth Junction, NJ 08852 U.S.A. You must obtain a Return Authorization Number and shipping instructions before returning any product for service.

Our obligation under this warranty is limited only to the repair or replacement of any of our products, provided that products are used within the specified ratings and applications, and that products are applied in accordance with good engineering practices, and that products are proved by our examination to be defective.

This warranty does not extend to any Infinova products which have been subject to acts of accident, misuse, abuse, neglect, improper application or installation, improper operation or maintenance, connection to an improper voltage supply or to materials which have been altered or repaired outside an authorized Infinova factory repair center.

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WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

DO NOT LOOK INTO OPTICAL PORTS WITH POWER ON.

PRODUCT DESCRIPTION

Description

The 3730 and 3530 series provide high quality reliable transmission of digitally encoded composite video and bidirectional data over one or two optical fibers. The modules are compatible with PAL, SECAM, and NTSC video signal. Data interface supports RS422, Manchester/Biphase, and 2-wire-or-4-wire RS485. Plug-and-play design ensures ease of installation requiring no electrical or optical adjustments. Each transmitter or receiver incorporates status indicators for monitoring of proper system operation. The modules are available in either stand-alone, card unit, miniature-transmitter module or plug-in integration transmitter versions.



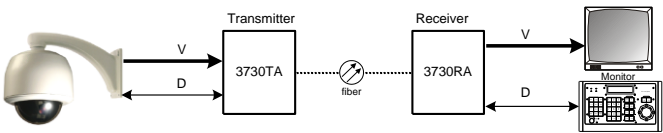
The 3730 series are compatible with 9/125micron single-mode fibers; the 3530 series are compatible with 50/125 or 62.5/125micron multimode fibers.

Camera end transmitter 3730T is compatible with monitor end receiver 3730R; camera end transmitter 3530T is compatible with monitor end receiver 3530R.

Accessories (optional)

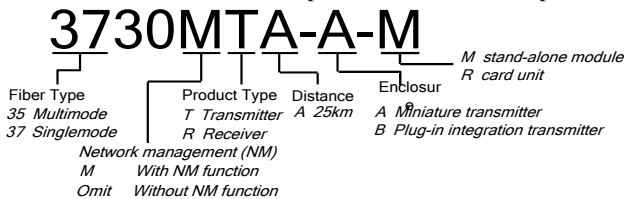
- | | |
|----------|--|
| 3910-000 | 19" 1U fan assembly unit |
| 3932 | Lightning surge protection card for one video and one data |
| 3934 | Lightning surge protection card for power supply, one video channel and one data channel |
| 3951 | Fiber optical transmission repeater |
| 3952 | 8-channel contact closure signals collector |
| 3954 | Control code distributor |

System Diagram



ORDERING INFORMATION

Use the Configuration chart below to select the options available for this product.



Note:

- 1. The transmission distance category is valid for singlemode product only.
- 2. There are only TA and RA for multimode product, and can transmit 2km.

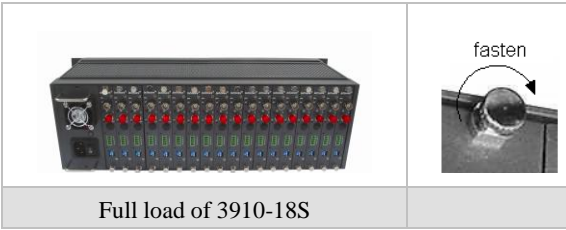
INSTALLATION

Installation of video and data interface

To install the apparatus, it is necessary to allow enough space to accommodate the bend radius of the optical cable connected to it. The transceiver requires as short as practical one BNC terminated coaxial cable to input/output the video signal. Data interfaces uses a 4-position terminal block connector.

Installation of card unit

Push the card unit along the guide rails (not in spaces between the rails). There is an Infinova logo on the front panel indicating the proper orientation. Press hard to make good connection to motherboard - loud snap indicates firm connection. There are two captive screws on the front panel that can fasten the card unit to the subrack. They must be locked by hand in a clockwise manner (do not over tighten), see figure right below.



There are 18 slots on 3910-18S. So it can mount 18 pieces of 3730/3530 card unit. Besides 3910-18S, there are 3910-1S, 3910-2S, 3910-3S, 3910-4S and 3910-15R optional. There are 1 slot on 3910-1S, 2 slots on 3910-2S, 3 slots on 3910-3S, 4 slots on 3910-4S and 15 slots on 3910-15R respectively.



3910-15R (Redundant power supply)

WARNING:

A FULL LOAD OF 3910-15R AND 3910-18S SUBRACK REQUIRES FORCED AIR COOLING IN THE RACK. TO AVOID OVER HEATING OF CARD UNITS, WHENEVER POSSIBLE, INSTALL IN EVERY OTHER SUBRACK.



Forced air cooling with 3910-000

POWER SUPPLY

Power supply for card unit

The 3730/3530 card unit is powered by a plug-in power supply that is provided with the appropriate desk chassis or EIA 19" subrack.

Power supply for stand-alone module

The 3730/3530 card unit can be converted into a stand-alone module when installing into a 1-slot chassis 3910-1S that is powered by a plug-in 12VDC@1A (3921-12D-1 for 110V; 3921-12D-2 for 230V) or 24VAC@1A (3921-24A-1 for 110V; 3921-24A-2 for 230V)

power supply. Plug the wires into the connectors, fasten the screws to make a firm connection, see figure below.



Power supply for miniature transmitter module

The miniature transmitter module is powered by a plug in 12VDC/24VAC@ 1A power supply 3921. Join the female connector to the module to power-on the module.

Power supply for plug-in integration transmitter

There is no additional power supply needed for plug-in integration transmitter, once the plug-in integration transmitter card is integrated into the dome, it's powered by the dome's power supply.



Power connection of miniature transmitter

Note:

When the series is powered together with other devices (cameras and etc.) by a single 24VAC power source, please make sure that the related device has a full-wave (bridge) rectifier circuit.

TRANSMITTER PANEL

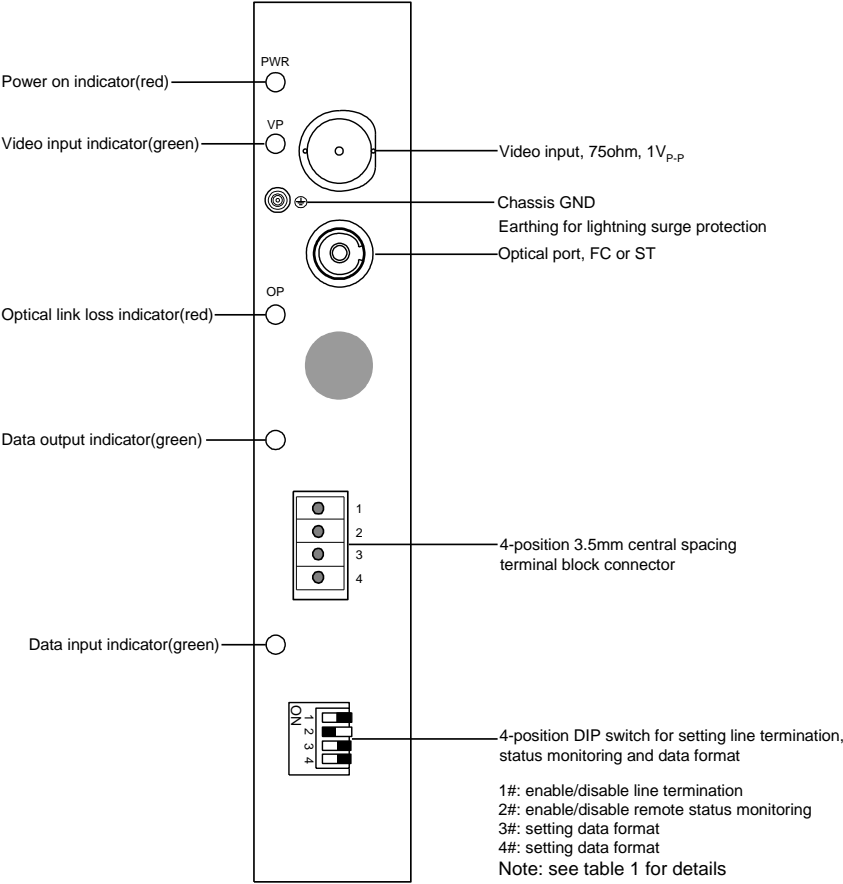


Figure 1. Transmitter panel

MINIATURE TRANSMITTER PANEL

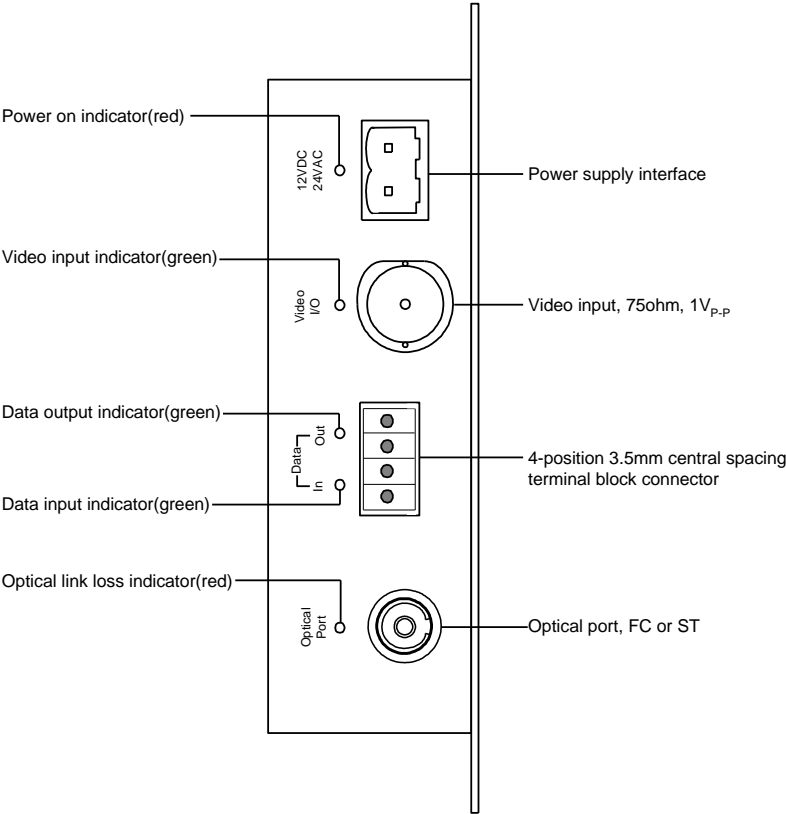


Figure 2. Miniature transmitter panel

2F MINIATURE TRANSMITTER PANEL

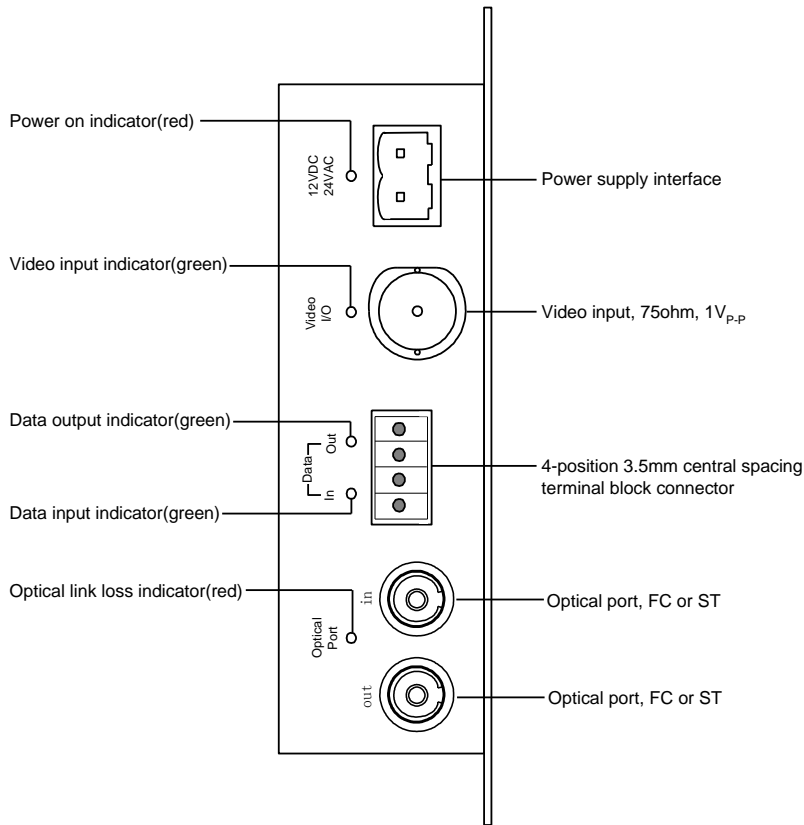


Figure3. 2F miniature transmitter panel

RECEIVER PANEL

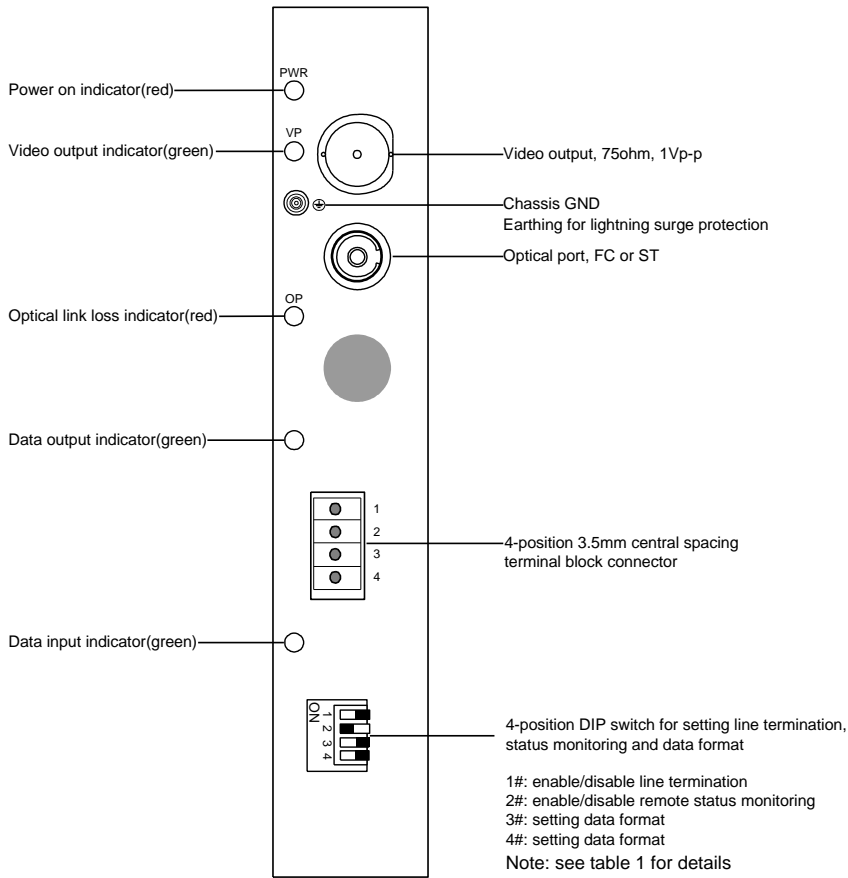


Figure 4. Receiver panel

DIP SWITCH SETTINGS

DIP-1 is to set line termination resistor; set it ON/OFF to connect/disconnect 120Ω termination resistor between Pin 3 and Pin 4. DIP-2 is to set the network management function, set it ON/OFF to disable/enable the Network Management function. If there is no NM function, make sure that DIP-2 is set ON. DIP-3 and DIP-4 are to set the data format. They should be identical on both transmitter and receiver for specified data.

Termination resistor

A multipoint bus architecture requires termination at both ends of the bus line to restrain signal reflection. The termination resistors must be within 20 percent of the characteristic impedance of the cable and can vary from 90 Ω to 120 Ω.

















Data format	DIP	Transmitter	Receiver
Full duplex 4-wire RS485 (OFF, OFF)	OFF  3 OFF  4		
RS422/Manchester/Biphase (OFF, ON)	OFF  3 ON  4		
Half duplex 2-wire RS485 (ON, OFF)	ON  3 OFF  4		
Return RS422/Manchester/Biphase (ON, ON)	ON  3 ON  4		

Table 1. DIP SWITCH SETTING REFERENCE

Location of DIP switch:



Plug-in integration transmitter



Miniature transmitter mode

For the detailed location of the DIP switch on transmitter and receiver, please refer to TRANSMITTER PANEL and RECEIVER PANEL

TYPICAL SYSTEM CONNECTION

One video with one return RS422 data

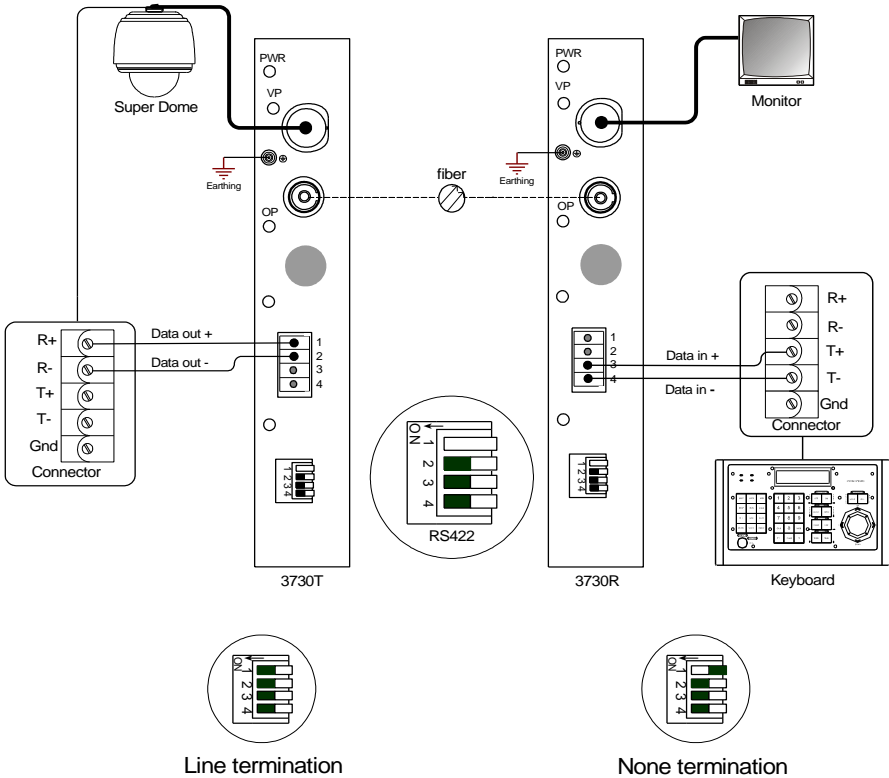


Figure 5. One video with one return RS422 data

Note:

1. User can get RS422 signal from the transmitter's Pin 3 and Pin 4 at one time.
2. Set DIP-1 ON to connect a 120Ω termination resistor whenever termination resistor is required.

TYPICAL SYSTEM CONNECTION

One video with return Manchester/Biphase Data

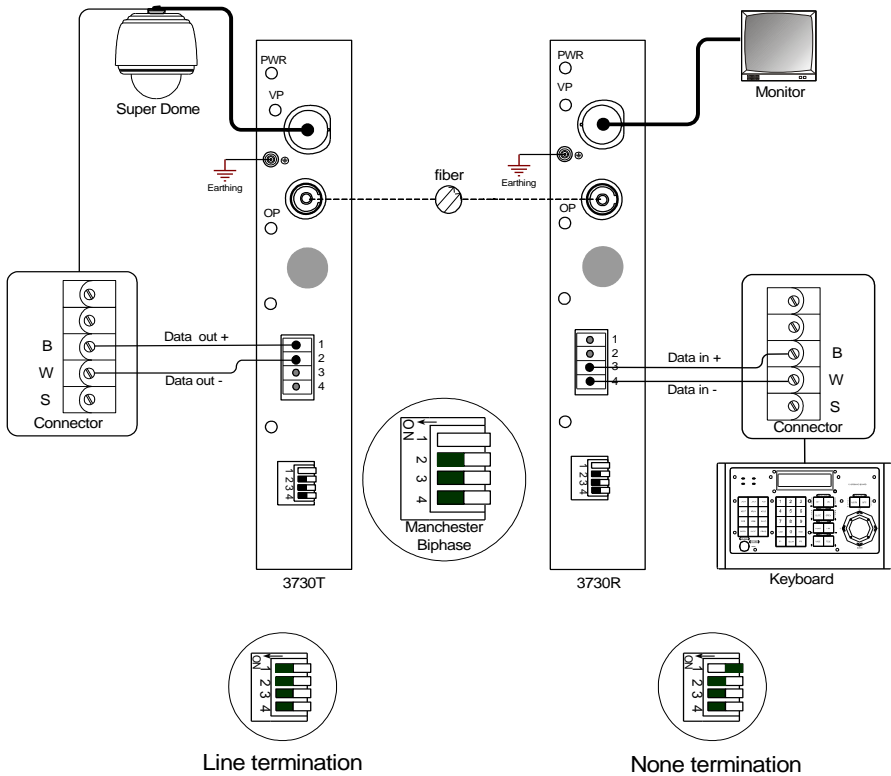


Figure 6. One video with one return Manchester/Biphase data

Note:

1. User can get Manchester signal from the transmitter's Pin 3 and Pin 4 at one time.
2. Set DIP-1 ON to connect a 120Ω termination resistor whenever termination resistor is required.

TYPICAL SYSTEM CONNECTION

One video with duplex RS422 data

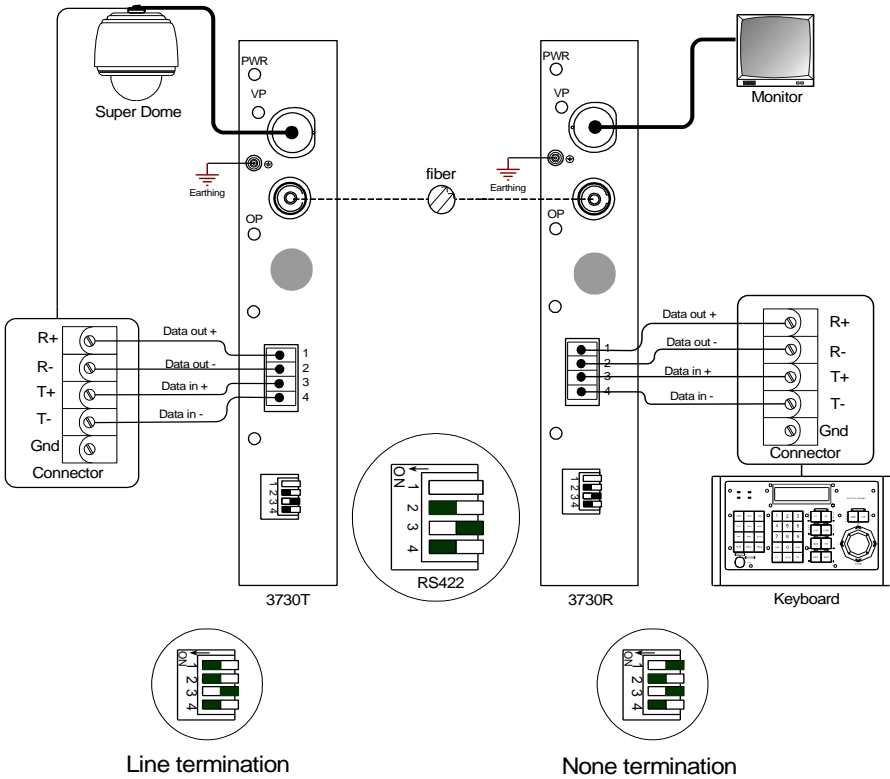


Figure 7. One video with duplex RS422 data

Note:

Set DIP-1 ON to connect a 120Ω termination resistor whenever termination resistor is required.

TYPICAL SYSTEM CONNECTION

One video with duplex Manchester/Biphase data

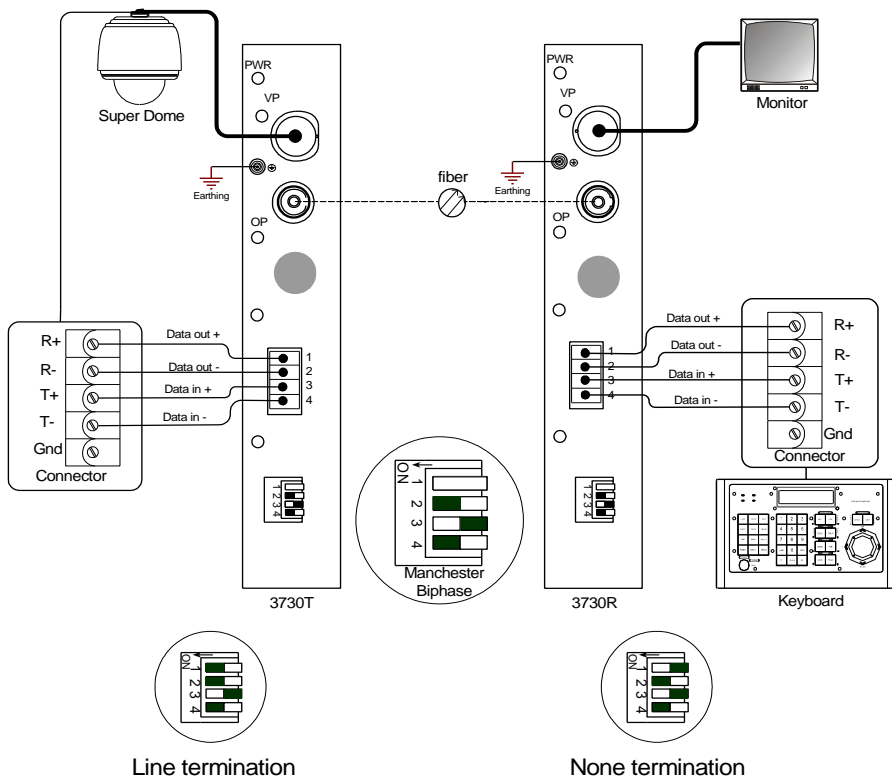


Figure 8. One video with duplex Manchester/Biphase data

Note:

Set DIP-1 ON to connect a 120Ω termination resistor whenever termination resistor is required.

TYPICAL SYSTEM CONNECTION

One video with full duplex RS485 data

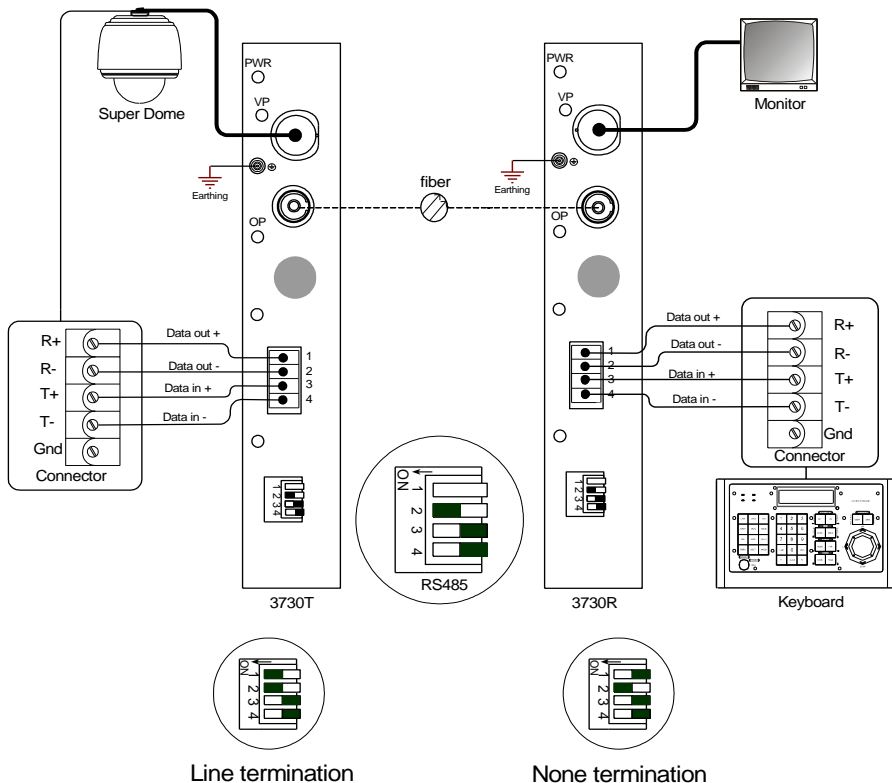


Figure 9. One video with full duplex RS485 data

Note:

Set DIP-1 ON to connect a 120Ω termination resistor whenever termination resistor is required.

TYPICAL SYSTEM CONNECTION

One video with half duplex RS485 data

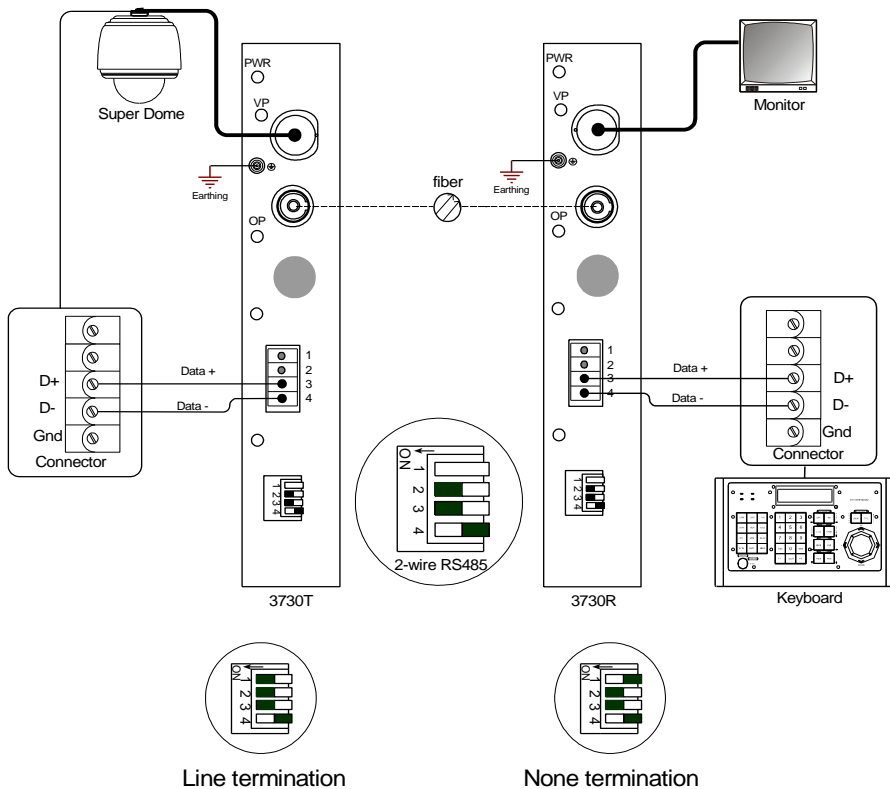


Figure 10. One video with half duplex RS485 data

Note:

Set DIP-1 ON to connect a 120Ω termination resistor whenever termination resistor is required.

NETWORK MANAGEMENT

The 3730 and 3530 series can add a network management system. After installing the NM system N3981, the remote transmitters send their running status to their respective receivers. The network management board collects and sends all the status information of the transmitters and the receivers to a host PC. With the network management software, users can survey the status of the remote transmitters and central receivers on the host PC conveniently, and can check all of the historical running status from the alarm log. The list below shows all of the status which the Network Management system can monitor:

- 1. the power supply status of transmitter and receiver
- 2. the optical link status of transmitter and receiver
- 3. the video signal status of transmitter and receiver
- 4. the data status of transmitter and receiver

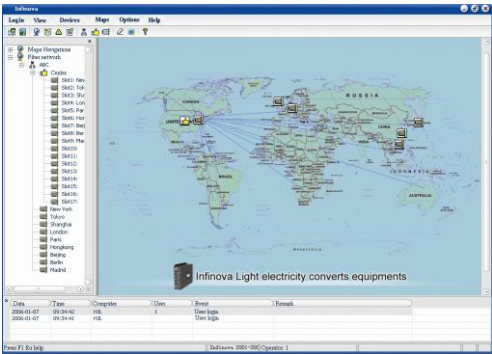


Figure 11. Network management software

WHEN NETWORK MANAGEMENT FUNCTION IS ENABLE, THE TRANSMISSION SYSTEM CAN ONLY TRANSMIT RETURN DATA!

DIP-2 is to enable/disable remote status monitoring, set it OFF to ENBALE the network management function.

SNM Enabled, DIP-2 off	SNM Disabled, DIP-2 on

Note:
If customer needs the network management function, please order a network management card N3946 in addition.

DAISY CHAIN

We can use daisy chain connection to simplified the wiring and controlling of remote domes. The control signal is connected to all of the 3730R/3530R, and transmitted to all of the 3730T/3530T through fiber optic respectively. In the remote site, the specified dome will act as the control signal instructs. The number of video receiver daisy-chained depends on the driving capability of code source.

System Diagram

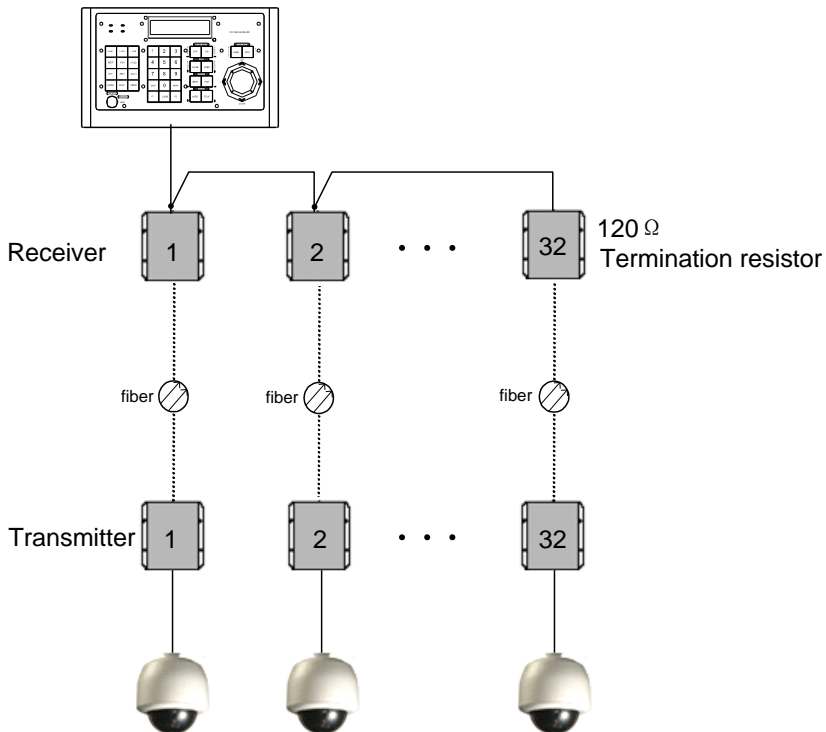


Figure 12. Daisy chain

Note:

There should be a 120Ω termination resistor on the final receiver for restrain signal reflection. Pay attention to it, please.

SURGE PROTECTION

Surge protection circuits are implemented to protect Infinova’s products against transient surge and over voltage. Over voltage can be caused by AC power or lightning flash disturbances that are induced or conducted onto the data line. It’s important that good earthing or grounding be applied to ensure the proper function of surge protection circuit. For reinforced protection, 3932 and 3934 are strongly recommended to protect your investment.

Typical application connection

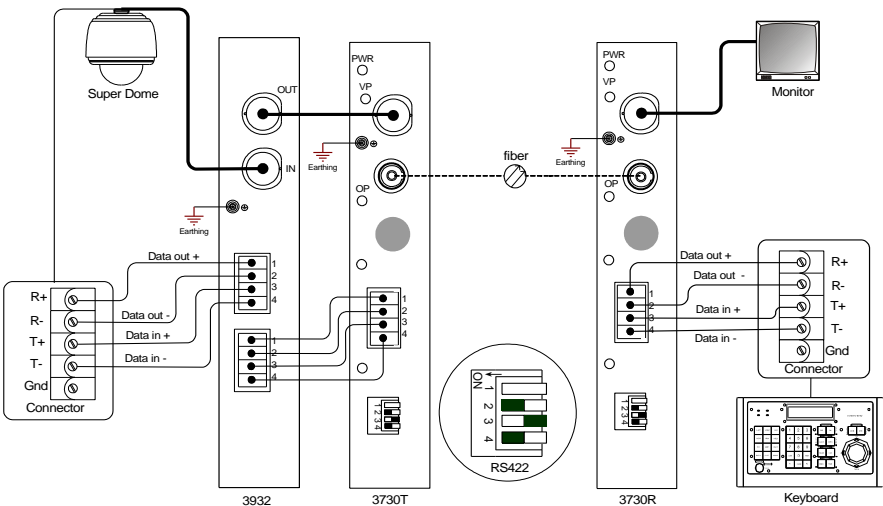


Figure 13. Lightning surge protection

TRANSMISSION REPEATER

The 3951 series is used between transmitter and receiver to extend the transmission distance of fiber optical system. It magnifies the optical signal received from transmitter, and sends it to receiver. By using a 3951, the transmission distance of the system is doubled.

Typical application connection

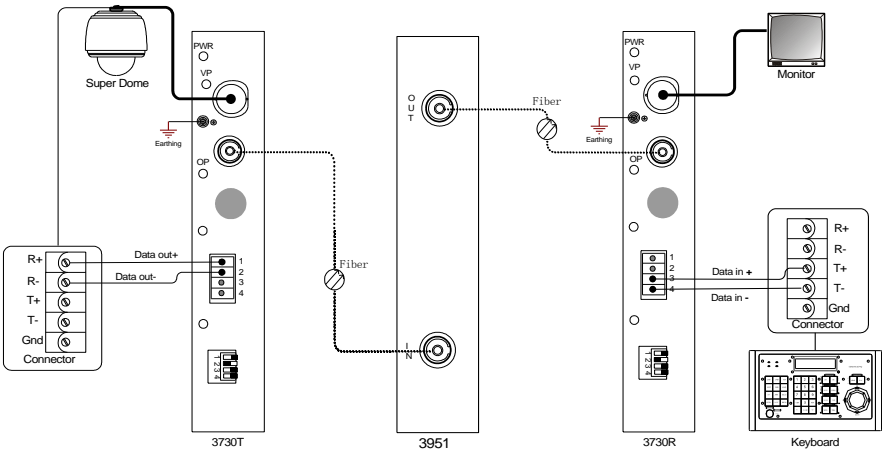


Figure 14. Transmission repeater

CONTACT CLOSURE SIGNAL

The 3952 series is a contact closure signals collector. This series can convert the input contact closure signals to one RS232/RS422/RS485 data, and convert input RS232/RS422/RS485 data to 8-ch unidirectional or 4-ch bidirectional contact closure signals. It can transmit the contact closure signals over a long distance when connecting with fiber optical transmission system. The number of contact closure channels is default setting, so are the data format.

Typical application connection

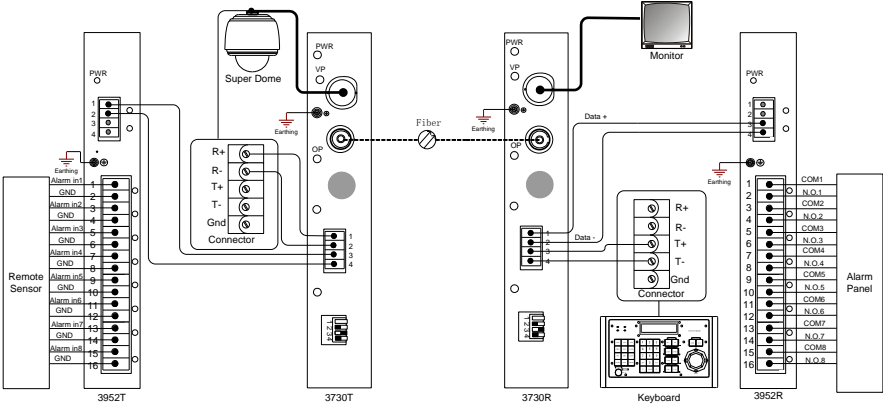


Figure 15. Contact closure signal

CODE DISTRIBUTOR

The 3954 is a code distributor designed for star connection where the code source is too far away from the video receiver and overload or reflection occurs.

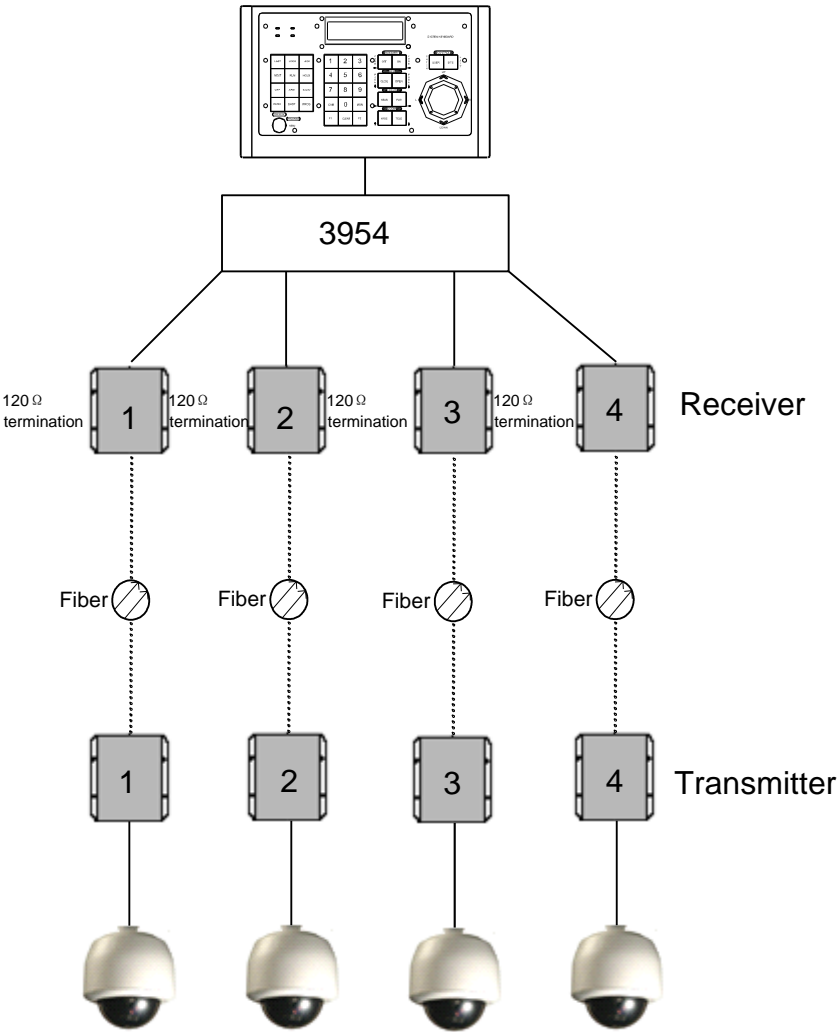


Figure 16. Code distributor diagram



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